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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,575	07/18/2003	James Robar	B537 0004 GNM/cc	2101

720 7590 09/20/2006

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EXAMINER	
KISH, JAMES M	

ART UNIT	PAPER NUMBER
3737	

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/621,575	ROBAR ET AL.	
	Examiner	Art Unit	
	James Kish	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/20/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9, 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable solely over Collins (US Patent No. 6,782,073). Collins discloses a system for determination of a treatment plan for delivering radiation to a target. Collins states, "Conventional radiation treatment typically involves directing a radiation beam at a tumor located within a patient (column 1, lines 18-21). In conventional radiation treatment systems, a linear accelerator generates a divergent beam of photons having energies in excess of 1 MeV and the beam is directed toward a target within a patient (column 1, lines 36-40)." Therefore, in conventional radiation treatment the maximum photon energy would exceed 1 MeV, the mean photon energy would exceed 250 keV and/or 1 MeV, and the maximum fluence energy would exceed 200 keV. A contrast agent can be used with the system. Preferable materials include iodine, Gadolinium, gold and tin. The contrast agent may comprise several materials, at least one of which is characterized by a high atomic number (column 9, lines 58-65). This could very well include lutetium. The contrast agent may be injected directly into the target or provided intravenously under control of a delivery unit of a processor (column 9, lines 66-67).

Collins makes a reference to U.S. Patent No. 6,366,801, assigned to Cash et al., and states, "Moreover, as described in Cash, kilo-voltage radiation may be used to irradiate a tumor that has been injected with a contrast agent composed of heavy elements (column 1, lines 64-66)." The kilo-voltage range discussed here is 50 to 150 keV (column 1, line 52). Also, the invention disclosed by Collins uses a 60 keV radiation beam (column 5, line 66 through column 6, line 1).

With respect to claims 7-9 and 19, the voltage needed by the linear accelerator to produce electron volts in the ranges described by claims 1-4 will vary depending on the materials with which the accelerator is comprised. Therefore, the mega-voltages in claims 7-9 and 19 are a design choice.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collins in view of Stieber et al. (US Patent No. 4,767,930). Collins discloses a system for determination of a treatment plan for delivering radiation to a target. However, Collins does not discuss beam uniformity or diameter. Stieber teaches methods to diffuse an electron beam. The method distributes the intensity of a charged particle beam over a relatively large area such that this area is irradiated with a substantially uniform current intensity (column 1, lines 55-59). The beam has a diameter of about 1 millimeter and comprises electrons of about 10 MeV (column 3, lines 10-13). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a method for altering the beam as described by

Stieber in the system of Colins in order to distribute the particle beam over a relatively large area so that the whole area is covered within a short time (column 2, lines 6-9).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Collins in view of Menor et al. (US Patent No. 4,627,089). Collins discloses a system for determination of a treatment plan for delivering radiation to a target. However, Collins lacks discussion on the use of flattening filters. Menor teaches a dvice for positioning a flattening filter in the center of an x-ray radiation. See Figures 1-3, as well as column 3, lines 35-68 for a description of these drawings. Also, see column 5, line 42 through column 6, line 68 for teachings on the different modes used with regard to different configurations of the flattening filters. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the flattening filter device of Menor in the treatment plan system of Collins in order to allow the linear accelerator to function at different modes of operation, e.g. high photon energy mode and low photon energy mode.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Kish whose telephone number is 571-272-5554. The examiner can normally be reached on 8:30 - 5:00 ~ Mon. - Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMK

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